PEACE/WILLISTON
FISH & WILDLIFE
COMPENSATION
PROGRAM

BC hydro

BRITISH
COLUMBIA

A Reconnaissance Survey Of Truncate Lake # 1

M. J. Hunter
March 1997

PWFWCP Report No. 153

105-02095/

The Peace/Williston Fish & Wildlife Compensation Program is a cooperative venture of BC Hydro and the provincial fish and wildlife management agencies, supported by funding from BC Hydro. The Program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett and Peace Canyon dams on the Peace River, and the subsequent creation of the Williston and Dinosaur Reservoirs.

Peace/Williston Fish and Wildlife Compensation Program, 1011 Fourth Ave. 3rd Floor, Prince George B.C. V2L 3H9

Website: *www.bchydro.bc.ca/environment/initiatives/pwcp/*

This report has been approved by the Peace/Williston Fish and Wildlife Compensation Program Fish Technical Committee.

Citation: M. J. Hunter. March 1997. A reconnaissance survey of Truncate Lake # 1. Peace/Williston Fish and Wildlife Compensation Program, Report No. 153. 18pp plus appendices.

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A RECONNAISSANCE SURVEY OF

UNNAMED LAKE (TRUNCATE LAKE # 1)

WATERSHED:	**Finlay River**
DATE OF SURVEY:	**August 9 - 10, 1996**
FIELD CREW LEADER:	**Mark Hunter**
FIELD ASSISTANT:	**Karin Mathias**
REPORT PREPARED BY:	**Mark Hunter**

BRITISH COLUMBIA CONSERVATION FOUNDATION

PEACE / WILLISTON FISH AND WILDLIFE COMPENSATION PROGRAM

B. C. MINISTRY OF ENVIRONMENT, LANDS AND PARKS

FUNDED BY: FOREST RENEWAL BRITISH COLUMBIA

RELEASED BY: _____

D. J. Cadden, Regional Fisheries Biologist

LAKE: Unnamed Lake (Truncate Lake # **1) SYSTEM NAME:** **Finlay River**

A.S.A.P. REFERENCE NO.: **SYSTEM NO.:** **239-1191-144**

DATA ON FILE FOR THIS SURVEY

Location	X	Dissolved 02 / Temp. Profiles	X
Physical Data	X	Winter Dissolved 02 / Temp. Profiles	--
Bench Mark	X	Netting Record	X
Terrain Features	X	Lake Catch Summary	X
Access	X	Individual Fish Data	--
Resorts and Campsites	X	Fish Preserved	--
Other Developments	X	Stomach Analysis	--
Obstructions and Pollutions	X	Scale Reading	--
Special Restrictions	X	Location of Inventory Sites	X
Aquatic Plants	X	Photograph Directory	X
Wildlife Observations	X	Appendices	
Miscellaneous Comments	X	A: Water Chemistry Analysis	X
Lake Drainage	X	B: Tributary Stream Data	--
Fisheries Management Comments	X	C: Fish Scale Analysis	--
History of Previous Surveys	X	Bathymetric Map Reduction	x
Water Chemistry Summary	X	Bathymetric Map	--

LOCATION

Location: approximately 42 km southeast of Fort Ware

Elevation:	750 m ± 10 m	U.T.M.:	10.367288.6333157
Latitude / Longitude:	57°07'21" 125°11'31"	N.T.S. Map No.:	94 - F / 3
Management Unit:	7-41	Biogeoclimatic Zone:	Boreal White & Black Spruce
Ecoprovince:	Northern Boreal Mountains	Ecoregion:	Northern Canadian Rocky Mountains
Ecosection:	Western Muskwa Ranges		

Drainage: Unnamed C. --> Unnamed L. --> Unnamed C. --> Unnamed L. --> Unnamed C. --> Truncate C. --> Finlay R. --> Williston Reservoir (Finlay Reach) --> Peace R.

PHYSICAL DATA

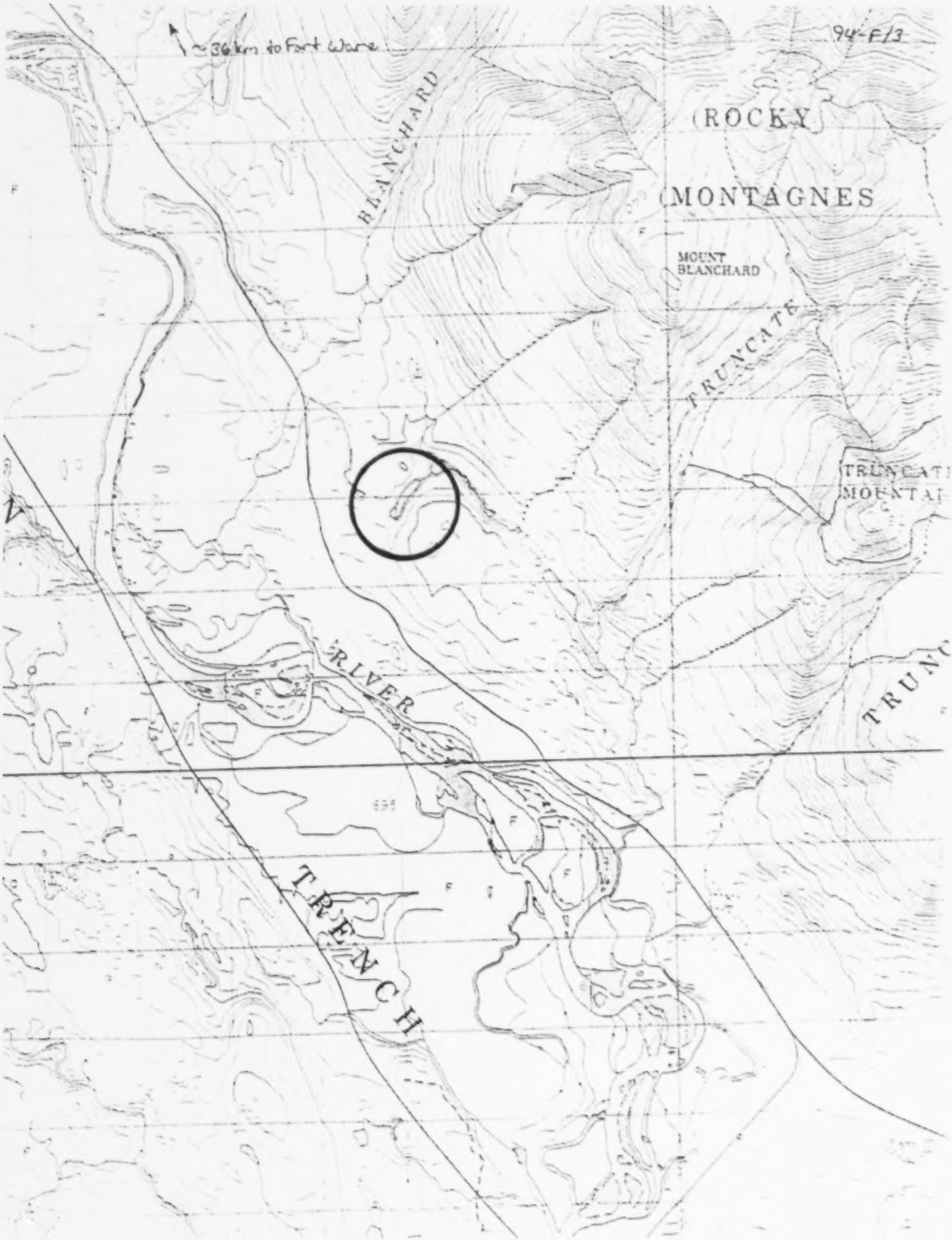
Lake Drainage Area:	0.6 km^2	Volume:	22 386 m^3
Water Surface Area:	42 566 m^2	Perimeter of Islands:	0 m
Area Above 6 m Contour:	42 566 m^2	Number of Islands:	0
Shoreline Perimeter:	1 246 m	Mean Depth:	0.6 m
Maximum Depth:	1.75 m	Secchi Reading:	1.75 m
Filterable Residue (TDS):	200 mg/L		

Sounding Device: Lowrance X-15 Elevation Source: Contour Interpolation

BENCHMARK

(Iron spike, center of red circle) located 2.0 m above present water level in a 12 cm diameter spruce tree that is 5.32 m from present water's edge and located in the east comer of the lake approximately 35 m from the rainbow trout (Plate # 4).

High Water Mark: 0.14 m above water level at time of survey


~36km to Fort Ware
94-F/3
BLANCHARD
ROCKY
MONTAGNES
MOUNT
BLANCHARD
TRUNCATE
RIVER
TRENCH

LAKE: Unnamed Lake (Truncate Lake # 1)

TERRAIN FEATURES

Immediate Shoreline:

Truncate Lake # 1 is almost entirely surrounded by a floating marsh of common red sphagnum and sedge grasses, with scrub birch, alders, Labrador tea, and spruce trees growing behind. There is a dry point of land in the northwest corner of the lake on which spruce trees grow down to the lake's edge.

There is a vertical drop-off to the lake's bottom on all side of the lake, except in front of the point of land in the northwest corner of the lake, due to the floating marsh. From the point of land, the lake's bottom has a low slope towards the lake's bottom. The shoreline substrate is composed entirely of a thick layer of silts and organics. Yellow waterlilies (Nuphar sp.), variableleaf pondweed (Potamogeton gramineus) and whitestem pondweed (Potamogeton praelongus) grow thickly over the entire bottom of Truncate Lake # 1.

Surrounding Country:

Truncate Lake # 1 is surrounded to the northwest, southwest and southeast by a mature forest of spruce and lodgepole pine trees growing on moderately sloped, rolling hills. A mature forest of spruce trees growing on low wetlands lies to the northeast of the lake. Also to the northeast lies an unnamed lake. To the southwest and northeast, mountains can be seen in the near distance. Truncate Lake # 1 is situated within the Boreal White and Black Spruce biogeoclimatic zone.

LAKE: Unnamed Lake (Truncate Lake # 1)

ACCESS

Directions:

From the junction of Highway 97 and Highway 39, drive south on Highway 97 for approximately 1.5 km and turn right on to the Finlay Forest Service Road. Travel north for approximately 200 km to Mesilinka Camp, then continue on the Finlay-Chunamon Forest Service Road for approximately 105 km to the Ingenika Arm of Williston Reservoir. A barge must be taken across the Ingenika Arm. On the north side of the Ingenika Arm, drive north on the Finlay Forest Service Road for approximately 72.5 km. Turn left, and proceed for approximately 3.7 km to Buffalo Head Camp (Finbow Camp). The total distance from the junction of Highway 97 and Highway 39 to Buffalo Head Camp is approximately 382.7 km. Truncate Lake # 1 is approximately a 23 km helicopter ride to the southeast of Buffalo Head Camp.

Barge transportation can be arranged with Finlay Navigation Inc. who can be reached in Prince George at (250) 964-3525 and in Mackenzie at (250) 997-3525. Actual barge pick-up times may vary greatly from the predicted pick-up time.

Road Type and Conditions:

Highway 97 is a well-maintained, two-lane paved highway. The Finlay Forest Service Road, on both sides of the Ingenika Arm, and the Finlay-Chunamon Forest Service Road from 0 km to approximately 79 km (Factor Ross Creek), are well-maintained, two-lane gravel logging roads that can be easily traveled with a two-wheel drive truck. After approximately 79 km, the Finlay-Chunamon Forest Service Road becomes quite narrow and very windy. The road in to Buffalo Head Camp from the Finlay Forest Service Road is a well-maintained, two-lane gravel road.

Restrictions:

Although there are no restrictions, it is recommended that a truck radio be used to monitor for traffic, especially along the windy part of the Finlay-Chunamon Forest Service Road.

RESORTS AND CAMPSITES

There are no resorts or campsites on Truncate Lake # 1.

OTHER DEVELOPMENTS

None noted.

LAKE: Unnamed Lake (Truncate Lake # 1)

OBSTRUCTIONS AND POLLUTIONS

Truncate Lake # 1 is entirely overgrown by yellow waterlilies (Nuphar sp.), variableleaf pondweed (Potamogeton gramineus) and whitestem pondweed (Potamogeton praelongus), which easily become tangled in the propeller of a motor boat.

SPECIAL RESTRICTIONS

None noted

AQUATIC PLANTS

The following aquatic plants were identified during the time of the survey:

yellow waterlily (Nuphar sp.)
variableleaf pondweed (Potamogeton gramineus)
whitestem pondweed (Potamogeton praelongus)
coontail (Ceratophyllum sp.)

WILDLIFE OBSERVATIONS

The following wildlife or signs were seen during the time of the survey:

moose (cow)
unidentified duck

MISCELLANEOUS COMMENTS

1) There was a large number of dragonflies feeding on mosquitoes around Truncate Lake # 1.

2) Truncate Lake # 1 is a hard lake to boat on due to the large amounts of yellow waterlilies (Nuphar sp.), variableleaf pondweed (Potamogeton gramineus) and whitestem pondweed (Potamogeton praelongus) that covers the entire lake's surface and are easily caught in the propeller of the outboard.

3) Bathymetric map: The lake outline was drawn from an enlargement of air photo 30 BC 87092: No. 067, flown September 7, 1987.

LAKE: Unnamed Lake (Truncate Lake # 1)

LAKE DRAINAGE

General:

Truncate Lake # 1 is fed by one main inlet from the west and one intermittent inlet from the northeast. The outlet drains the lake to the east, and flows for approximately 0.17 km to drain into an Unnamed Lake (Truncate Lake # 2). This lake is drained to the south by an Unnamed Creek that flows for approximately 1.0 km to another Unnamed Lake (Truncate Lake # 3), which again is drained to the south by an Unnamed Creek that flows for approximately 0.45 km to Truncate Creek. Truncate Creek runs approximately 3.0 km to the it's confluence with the Finlay River.

Major Systems:

There are no major systems.

Minor Systems:

Inlet # 1 - Unnamed Creek

Inlet # 1 enters Truncate Lake # 1 in the southwest end of the lake (Plate # 5). The creek has an average wetted width of 0.3 m and depth of 0.05 m. The substrate is composed of mosses. The channel is held by banks composed of mosses, sedge grasses and Equisetum. The channel is ill-defined for it's entire length. Inlet # 1 had no fisheries potential during the survey period.

Outlet - Unnamed Lake

The outlet drains Truncate Lake # 1 to the northeast (Plate # 6). From the lake's edge, the outlet flows under the floating marsh for 5 m before it surfaces into a defined channel. The creek has an average wetted width of 0.3 m and depth of 0.35 m. The substrate is composed of silts and organics with some woody debris. Approximately 125 m downstream of Truncate Lake # 1, there is a 0.1 m high debris jam that forms a small cascade that is passable to fish movement. Approximately 170 m downstream of the lake, the outlet flows into an unnamed lake (Truncate Lake # 2). The outlet had no fisheries potential during the survey period.

LAKE: Unnamed Lake (Truncate Lake # 1)

FISHERIES MANAGEMENT COMMENTS

Truncate Lake # 1 appears to be barren of all sport fish species. No fish were caught in an experimental monofilament gill net set for 4.5 hours; however, 148 lake chub were caught in four Gee minnow traps set for 4.3 hours. There was no suitable salmonid spawning or rearing habitat found in either the inlet or outlet creeks. The lake is only 1.75 m deep, and there is a good possibility that, because it is so shallow, Truncate Lake

1 may be subject to winter-kill.

HISTORY OF PREVIOUS SURVEYS

Lake Surveys:

None known.

Other Related Studies:

None known.

LAKE: Unnamed Lake (Truncate Lake # 1)

WATER CHEMISTRY SUMMARY **Limnology Station No. 1**

Field Conditions:

Date:	August 10, 1996		
Time:	1225 hrs	Air Temperature:	26.0 °C
Wind Velocity:	0 - 2 km/h	Wind Direction:	from the SW
Cloud Cover:	2 / 10 o.c.	Surface Conditions:	calm
Secchi Disc:	1.75 m	Water Colour:	cloudy with yellowish tinge

Method Used:

Dissolved Oxygen:	YSI Model 57 Oxygen / Temperature Meter
Water Temperature:	YSI Model 57 Oxygen / Temperature Meter
Air Temperature:	Hand-Held Alcohol Thermometer
pH (field):	Digital pH Pocket Tester
H2S (field):	Hach H2S Field Test Kit
Laboratory Used:	Pacific Environmental Science Center
Water Sampler:	Vertical Alpha Water Bottle (Vandorn)
Metal Sampler:	By Hand; Preserved With 2.0 mL Nitric Acid
Substrate Sampler:	Substrate Sample Not Taken

Water Sample Chemistry: **SEAM Site No.:**

	Sampling Depths	
	Surface (0.5 m)	Lower (1.5 m)
Alkalinity (lab)	189 mg / L	190 mg / L
Filterable Residue 105°C (lab)	200 mg / L	200 mg / L
H2S (field)	N/A	0.0 mg / L
Nitrogen - Total (lab)	0.64 mg / L	0.69 mg / L
Non-Filterable Residue (lab)	< 5 mg / L	< 5 mg / L
pH (field)	7.6	7.6
pH (lab)	8.16	8.06
Phosphorus - Total Dissolved (lab)	0.006 mg / L	0.005 mg / L
Specific Conductance (lab)	337 .LS / cm	337 µS / cm

Bottom Depth: 1.75 m

Substrate Sample Depth: N/A

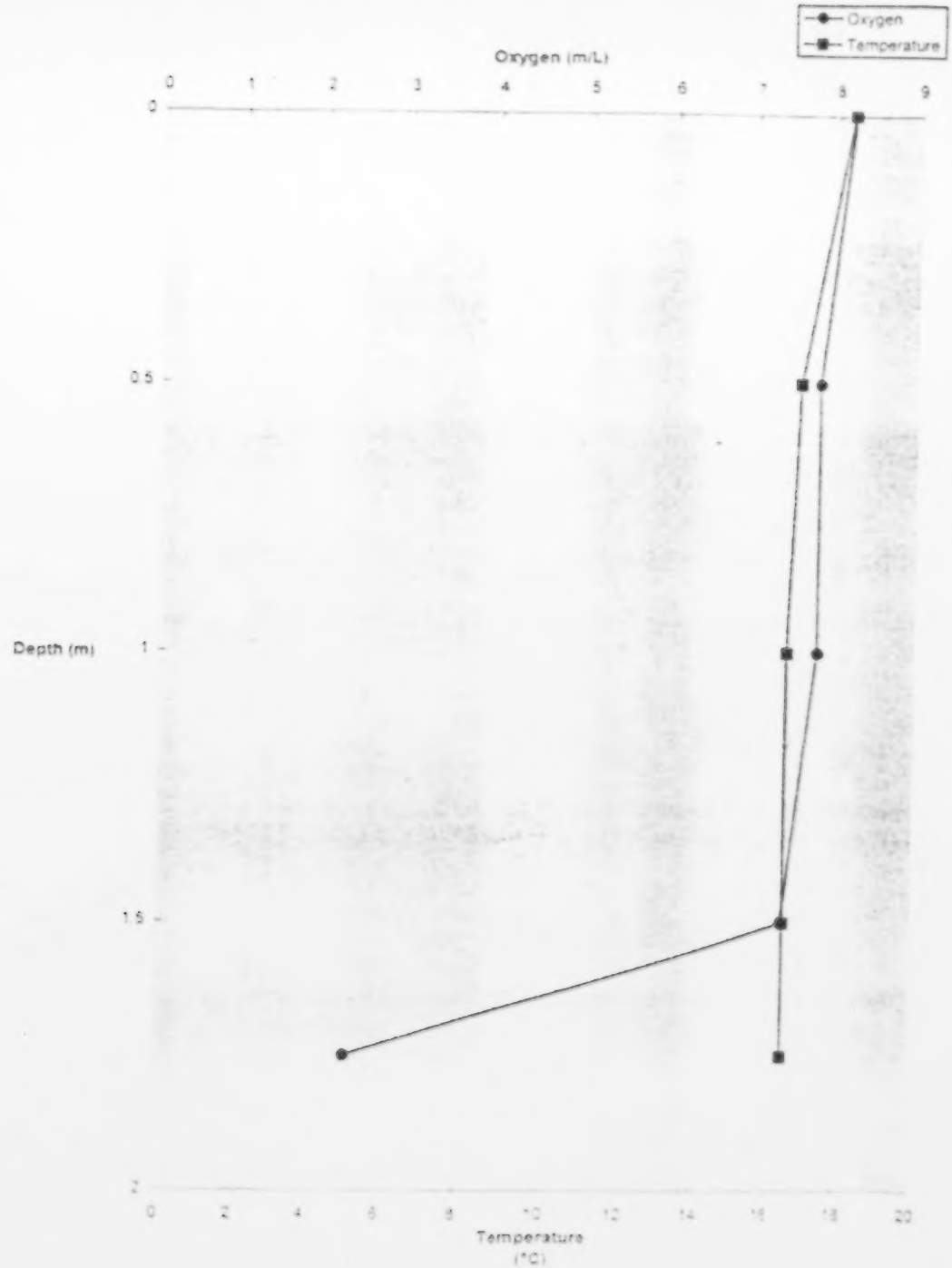
* additional analyzed parameters and results, including metals, are found in Appendix 1

LAKE: Unnamed Lake (Truncate Lake # 1)

SUMMER OXYGEN / TEMPERATURE DATA

DEPTH (m)	02 (mg / L)	TEMPERATURE (°C)
Surface	8.2	18.2
0.5	7.8	16.8
1.0	7.8	16.5
1.5	7.4	16.5
1.75	Bottom	

SUMMER OXYGEN / TEMPERATURE PROFILE



LAKE: Unnamed Lake (Truncate Lake # 1)

NETTING RECORD

Mesh Size Experimental Order: 25, 76, 51, 89, 38, 64 mm

NETTING SITE # 1

Type:	Sinking Monofilament Gill Net			
Date Set:	August 9, 1996		Time:	1520 hrs
Date Lifted:	August 9, 1996		Time:	1940 hrs
Net Dimensions:	Length:	91.4 m	Depth:	2.4 m
Shallow End Mesh Size:	25 mm		Depth:	0.5 m
			Substrate:	fines / organics
Deep End Mesh Size:	64 mm		Depth:	N/A
			Substrate:	fines / organics

Comments: * The net was set from shoreline to shoreline, with the excess net left in the travel box on the north shore. The net was empty.

LAKE CATCH SUMMARY

Minnow Traps:

Bait: Sardines

Trap No.	Hours	Depth (m)	Substrate	Species	No. Caught	Size Range (cm)
1	4:18	0.6	thick organics with pondweed	LKC leech	67 57	5.1-8.4
2	4:24	1.1	thick organics with pondweed	LKC leech	32 24	5.6-8.7
3	4:26	1.2	thick organics with pondweed	LKC leech	1 4	7.4
4	4:26	0.9	thick organics with pondweed	LKC leech	48 20	6.3-9.9

LOCATION OF INVENTORY SITES
Benchmark
Stream Number And Direction Of Flow
NS
Net Set Number And Site
LS
Limnostation Number And Site
Plate Number And Direction Of Photograph

LAKE: Unnamed Lake (Truncate Lake # 1)

PHOTOGRAPH DIRECTORY

Plate	Roll : Number	Description
1	14:7	Aerial view of Unnamed Lake (Truncate Lake # 1) looking northeast.
2	14:12 - 13	Panoramic view of Unnamed Lake (Truncate Lake # 1) looking southwest from the center of the lake.
3	14: 10 - 11	Panoramic view of Unnamed Lake (Truncate Lake # 1) looking northeast from the center of the lake.
4	14: 9	View of the benchmark located 2.0 m above present water level in a 12 cm diameter spruce tree that is 5.32 m from present water's edge and located in the east comer of the lake approximately 35 m from the Outlet Creek.
5	14:14	View of the mouth of Inlet # 1 were it enters Unnamed Lake (Truncate Lake # 1) in the southwest end of the lake.
6	14: 8	View of the mouth of the Outlet Creek where it drains Unnamed Lake (Truncate Lake # 1) from the northeast end of the lake.

LAKE: Unnamed Lake (Truncate Lake # 1)

Plate # 1: Aerial view of Unnamed Lake (Truncate Lake 4 1) looking northeast.

LAKE: Unnamed Lake (Truncate Lake # 1)

Plate # 5: View of the mouth of Inlet # 1 where it enters Unamed Lake (Truncate Lake # 1) in the southwest end of the lake.

Plate # 6: View of the mouth of Outlet Creek where it drains Unnamed Lake (Truncate Lake # 1) from the northeast end of the lake.

LAKE: Unnamed Lake (Truncate Lake # 1)

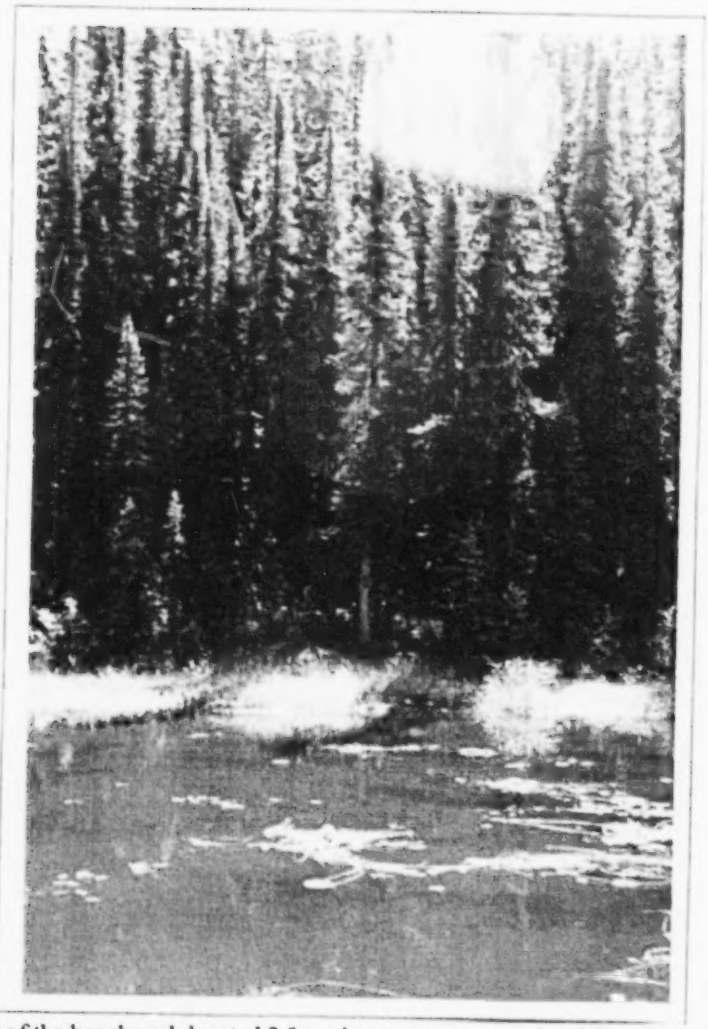


Plate # 4: View of the benchmark located 2.0 m above present water level in a 12 cm diameter spruce tree that is 5.32 m from present water's edge and located in the east corner of the lake approximately 35 m from the Outlet Creek.

LAKE: Unnamed Lake (Truncate Lake # 1)

Plate # 3: Panoramic view of Unnamed Lake (Truncate Lake # 1) looking northeast from the center of the lake.

LAKE: Unnamed Lake (Truncate Lake # 1)

Plate # 2: Panoramic view of Unnamed Lake (Truncate Lake # 1) looking southwest from the center of the lake.

Appendix A

LABORATORY REPORT

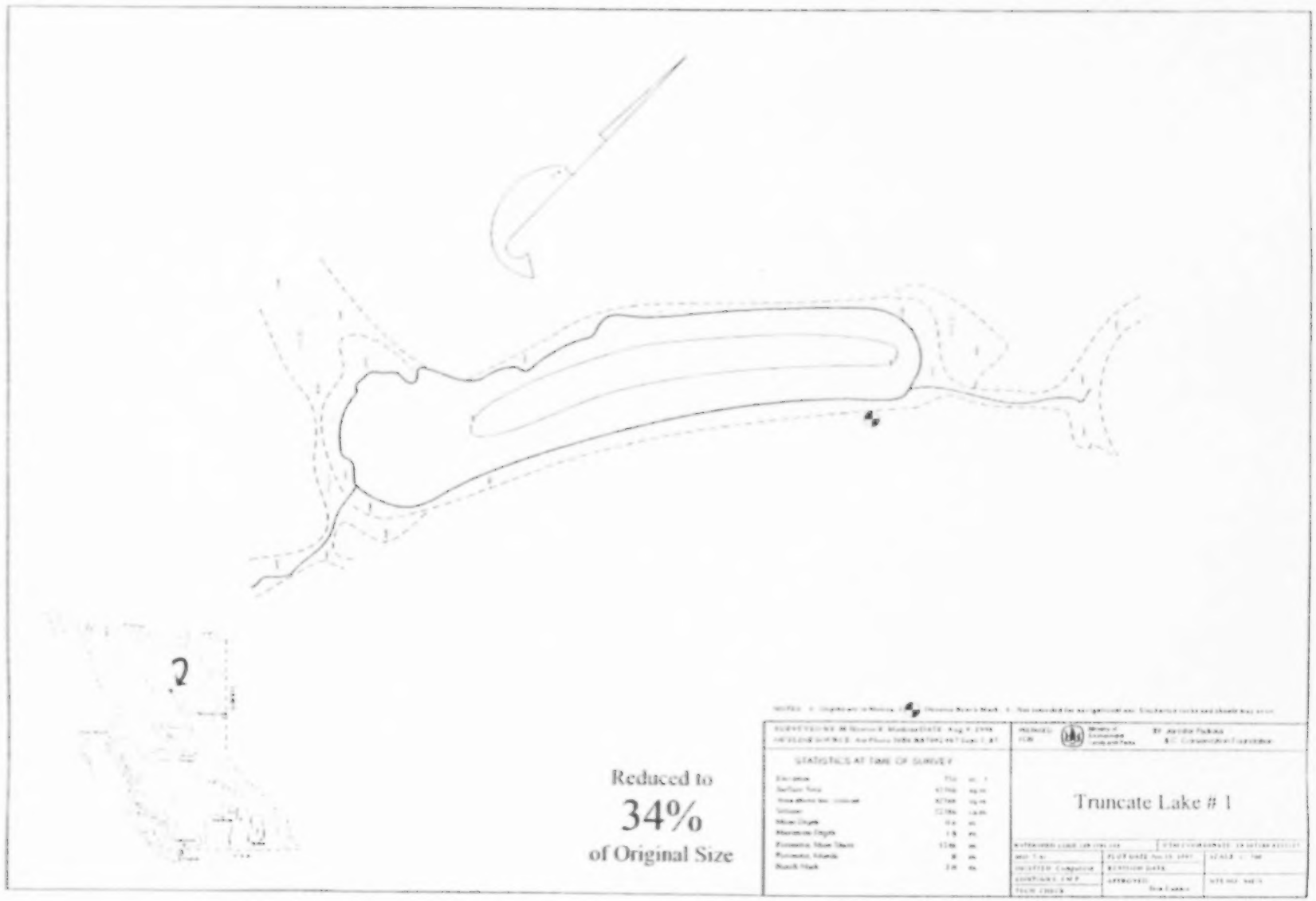
Water Chemistry Analysis

RESULTS FOR UNNAMED LAKE-TRUNCATE LK #1 SAMPLES

Parameter Analyzed		Units	963801-001	963801-002
ALKALINITY		mg/l	189	190
CONDUCTIVITY		uS/cm	337	337
METALS/TOTAL (WATER-ICP)	AG	mg/l	<.01	-
	AL	mg/l	<.06	-
	AS	mg/l	<.06	-
	B	mg/l	<.01	-
	BA	mg/l	.149	-
	BE	mg/l	.001	-
	CA	mg/l	54.2	-
	CD	mg/l	<.006	-
	CO	mg/l	<.006	-
	CR	mg/l	.016	-
	CU	mg/l	<.006	-
	FE	mg/l	.162	-
	K	mg/l	.5	-
	MG	mg/l	14	-
	MN	mg/l	.015	-
	MO	mg/l	<.01	-
	NA	mg/l	2.1	-
	NI	mg/l	<.02	-
	P	mg/l	<.1	-
	PB	mg/l	<.06	-
	SB	mg/l	<.06	-
	SE	mg/l	<.06	-
	SI	mg/l	1.1	-
	SN	mg/l	<.06	-
	SR	mg/l	.169	-
	TI	mg/l	<.002	-
	V	mg/l	<.01	-
	ZN	mg/l	.004	-
NITROGEN/AMMONIA		mg/l	.084	.091
/NITRITE		mg/l	<.002	.002
/NITRITE+NITRATE		mg/l	.006	.008
/TOTAL		mg/l	.64	.69
PH		Rel.U.	8.16	8.06
PHOSPHORUS/O-PO4		mg/l	<.001	<.001
/TOTAL		mg/l	.013	.01
/TOTAL DISSOLVED		mg/l	.006	.005
RESIDUE/FILTERABLE		mg/l	200	200
/NON-FILTERABLE		mg/l	<5	<5
BC CLIENT STUDY CODE			20	20
SAMPLING AGENCY			91	91
SITE IDENTIFIER/NUMBER			E223173	E223173
COLLECTION START DATE		y/m/d	96/08/10	96/08/10
UPPER DEPTH		METERS	0.5	1.5
TEMPERATURE ON ARRIVAL		deg.C	7	7

Appendix B

BATHYMETRIC MAP



Reduced to
34%
of Original Size

Truncate Lake # 1